

Home Freezing of Vegetables

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Freezing is one of the easiest, most convenient and least time-consuming methods of preserving foods. Freezing keeps the natural color, fresh flavor and nutritive qualities of most foods better than other known methods of preservation. Although freezing does not sterilize food, the extreme cold retards the growth of microorganisms and slows down chemical changes that affect quality or cause food to spoil.

Top Quality Frozen Vegetables

To maintain top quality, frozen vegetables should be stored at 0°F or lower. Most refrigerator-freezer combinations and separate freezer units should have no trouble in maintaining this temperature. A freezer thermometer can help you determine the actual temperature of your freezer. These thermometers are relatively inexpensive and generally available at hardware or grocery stores.

If your freezer has numbered temperature settings, such as from 1 to 9, check the owner's manual to see what settings are recommended for different uses. Storing frozen foods at temperatures higher than 0°F increases the rate at which deterioration can take place and can shorten the shelf life of the foods.

Containers for Freezing

Foods for your freezer must be properly packaged to protect their flavor, color, moisture content and nutritional value from the dry climate of the freezer. To prevent loss of quality and nutrients, freezing must be rapid. Therefore, it is best not to freeze vegetables

in containers with a capacity over one-half gallon as the foods freeze too slowly to result in a satisfactory product.

The selection of containers depends on the type of food to be frozen, personal preference and availability of certain types. There are two types of packaging materials for home use: rigid containers and flexible freezer bags or wrappings.

Rigid Containers

- Made of plastic or glass
- Suitable for all packs and especially good for liquid packs
- Often reusable
- Make stacking of foods easier

If using glass jars, choose wide-mouth, dual-purpose jars made for freezing and canning. These jars have been tempered to withstand extremes in temperatures.

Covers for rigid containers should fit tightly. If they do not, freezer tape can be used to reinforce the seal.

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Flexible Freezer Bags or Wrapping Materials

Dry-packed products with little or no liquid and foods with irregular shapes can be preserved using flexible freezer bags or wrappings. Wrapping materials include

- plastic freezer wrap,
- freezer paper, and
- heavy-weight aluminum foil.

Plastic freezer bags are available in a variety of sizes and work well for liquid packs. Use bags labeled for freezer use. Regular storage bags are thinner and suitable for short-term refrigerator storage only. When packaging, make sure to eliminate air pockets. Press to remove as much air as possible before closing.

Vacuum Sealer

Dry packs and frozen vegetables may be packaged using a vacuum sealer. Vacuum packaging removes more air from the packages than could be pressed out and seals the air out. Carefully follow the directions that come with the vacuum sealer. To avoid the risk of botulism from some vacuum-packaged foods, keep foods frozen until ready to use.

Preparing Vegetables for Freezing

For best results, products should be frozen as quickly as possible. To facilitate more rapid freezing, set the temperature control of your freezer at the coldest setting several hours before foods will be placed in the freezer. Some freezer manuals indicate the location of the coldest shelves in the freezer and suggest placing products on these shelves.

Prior to loading the freezer, check the freezer manual for instructions on recommended amounts of unfrozen product that can be frozen at one time. Generally, guidelines specify 2 to 3 pounds of food to each cubic foot of freezer space per 24 hours. Overloading the freezer with unfrozen products will result in a long, slow freeze and a poor quality product.

Blanching

Blanching is the first step in preparing vegetables for home freezing. The blanching process involves scalding vegetables in boiling water for a short time. Blanching

- stops enzyme actions that can cause loss of flavor, color and texture,
- cleanses the surface of dirt and organisms,
- brightens the color,
- helps retard the loss of vitamins, and
- softens the vegetables and makes them easier to pack.

Equipment and Supplies

- produce scale (optional)
- kitchen timer
- knife and/or vegetable peeler
- cutting board
- freezer bags, rigid freezer containers or glass jars made for freezing
- waterproof marker

For heating vegetables:

- blanching kettle that has a blanching basket and lid or
- large pot with lid and wire basket or metal colander that fits inside

For cooling vegetables:

- large bowl or pot
- colander
- plenty of fresh, cold water
- ice cubes (optional)

Step-by-Step Blanching Process

1. Select produce that is young, tender, unwilted and garden fresh. Refrigerate fresh vegetables until you are ready to begin blanching.
2. Prepare vegetables:
 - Wash thoroughly in cold water.
 - Trim stem ends.
 - Peel root vegetables (except beets).
 - Sort by size or cut into uniform-sized pieces so each batch heats evenly.



3. Use 1 gallon water per pound of prepared vegetables. Over high heat, bring the water to a vigorous boil.
4. Place about 1 pound of prepared vegetables into the blanching basket or colander. Lower into the boiling water. Vegetables should be completely immersed in the water.
5. Place a lid on the kettle or pot. The water should return to boiling within 1 minute. If this is not the case, you are using too much vegetable for the amount of boiling water. Start counting blanching time or set kitchen timer as soon as the water returns to a boil. Blanching time is determined by the type of vegetable being processed. Keep heat high for the time recommended in the Blanching Chart provided in this publication.

Note: Overblanching results in a cooked product. Underblanching can stimulate enzyme activity. Either error will reduce the quality of the frozen food.

6. At the end of the recommended time, lift the vegetables out of the boiling water, drain momentarily and immediately plunge into a large quantity of cold water, 60°F or below.

Vegetables should be cooled for the same amount of time that they were heated. When processing several batches of vegetables, change the

cooling water often or use ice cubes to keep the water cold.

To cool mashed vegetables, place in a shallow pan and set into a container of cold water. Stir occasionally to hasten cooling.

7. After cooling, lift the vegetables out of the cold water. Let them drain in the blanching basket or transfer them to a colander. Drain vegetables thoroughly after cooling. Extra moisture can cause a loss of quality when vegetables are frozen.
8. Package prepared vegetables in the storage container of your choice. If using rigid freezer containers, leave ½ inch headspace to allow for the food to expand. Headspace is not needed for loosely packed foods such as broccoli spears.
9. Label bags or containers with a waterproof marker. List the name of the product, the amount of product (cups, ounces or pounds) and the date processed.
10. Place packages in the freezer. Arrange them loosely or in a single layer so they freeze quickly. Home-frozen vegetables have a storage time of 8 to 12 months when properly packaged and stored at 0°F. After this time, the food should still be safe, yet quality may be affected.



Blanching Chart

The size and density of the vegetable determines the time needed for heat to completely penetrate the food. Use the longer recommended blanching times for larger-sized vegetables.

VEGETABLE	PREPARATION (size in inches)	HEATING TIME in boiling water (minutes)	COMMENTS
Beans, snap	2 to 4 inches	3	
Beet	small whole medium whole	25 to 30 45 to 50	cook until skin slips off, dice or slice
Broccoli	1½-inch diameter spears chopped	3 1½ to 2	peel stalks if desired
Brussels sprouts	small heads medium heads	3 4	trim outer leaves
Cabbage	shredded or chopped	1½	stir for even heating
Carrot	small whole ¼-inch slices or strips	5 2	
Cauliflower	1-inch flowerets	3	add 4 teaspoons of salt per gallon of water to prevent darkening
Celery	1-inch lengths	3	for cooking uses only
Corn, sweet	whole cob kernels	7 to 11 4	wrap each cob, then bag blanch on cob, then cut
Greens including chard, collards, kale, mustard, spinach	whole or chopped	3 (collards) 2 (other greens)	stir for even heating
Kohlrabi	½-inch cubes	1	peel
Onion	whole bulb rings	3 to 7 10 to 15 seconds	for cooking uses only batter before freezing if desired
Parsnip	½-inch cubes	2	
Peas	shelled edible pod sugar snap	1½ 1½ to 2 2 to 3	wash in pan to float off debris
Pepper	halved ½-inch strips	3 2	blanching optional
Potato			freezing is not recommended
Rutabaga	½-inch cubes mashed	3 until soft	boil or steam chunks, then mash
Squash, summer including zucchini	½-inch slices grated	3 1 to 2 (steam)	freeze in measured amounts for baking
Squash, winter including pumpkin	mashed	until soft	bake, steam or boil, scrape from rind, and mash
Tomato, stewed	peeled, quartered	until soft	heat in own juices until cooked (10 to 20 minutes)
Turnip	½-inch cubes mashed	2 until soft	boil or steam chunks, then mash